Vascular surgery and the Resource-based Relative Value Scale five-year review

Robert M. Zwolak, MD, PhD, and **Hugh H. Trout III, MD,** *Lebanon, N.H.; and Washington, D.C.*

Purpose: The first 5-year review of the Medicare Resource-based Relative Value Scale (RBRVS) work values (RVUs) began in 1995, and adjustments became effective January 1, 1997. This report summarizes the methods used by The Society for Vascular Surgery (SVS) and the International Society for Cardiovascular Surgery, North American Chapter, (ISCVS-NA) Joint Council Government Relations Committee (GRC) to evaluate vascular surgery work RVUs and the results that were achieved.

Methods: The GRC performed a work study to determine accurate skin-to-skin operative times for typical vascular and nonvascular operations. These were compared with the original Harvard/Hsiao time estimates and intraservice work per unit time (IWPUT) values that had been used to determine work RVUs. For most vascular procedures the current operative times were longer than the original Harvard estimates, resulting in calculated IWPUTs substantially less than the Harvard values. This lack of correspondence was not identified in the nonvascular procedures, where operating room times and IWPUT values were more consistent with Harvard data. These study results were then used to support compelling evidence arguments in a petition to the Health Care Financing Administration (HCFA) that identified vascular surgery as being undervalued in the RBRVS. Nine commonly performed vascular procedures were cited for review in the 5-year update, and five distinct work analysis methods were used to justify each recommended RVU increase. These techniques included a standardized survey from the American Medical Association (AMA)/Specialty Society Relative Value Update Committee (RUC), a work calculation using accurate intraservice times and appropriate IWPUT values, and an evaluation and management (E&M) building-block approach.

Results: The RUC met throughout 1995 to assess codes submitted for review, and recommendations were forwarded to HCFA. The Notice of Proposed Rule Making (NPRM), which contained HCFA's preliminary RVU determinations, was released in May 1996. RVU increases from 11.5% to 44.6% were proposed for the nine vascular services cited by the SVS/ISCVS-NA. Also included were two increases and two reductions in less-common vascular operations. Of far greater overall fiscal import, HCFA proposed substantial increases in the work RVU for all E&M except that performed within global surgical packages. The SVS/ISCVS and most other surgical societies appealed HCFA's proposal regarding E&M. The Final Rule for the 1997 Medicare Fee Schedule was published late in 1996.

Conclusions: The Final Rule upheld the 11 vascular work value improvements and the E&M increases that excluded global service packages. Because most surgical E&M is performed within 10- or 90-day global periods, the E&M ruling will produce an estimated annual $2.5 billion shift from surgical to nonsurgical specialties. Because the overall fiscal impact of the 5-year review was mandated to be budget-neutral, HCFA imposed an 8.3% reduction in the work payment of every service in Part B of the Medicare program, primarily to compensate for the increased nonsurgical E&M payments. The net fiscal impact of the 5-year review for vascular surgery has been estimated at +0.5%. (J Vasc Surg 1997;25:1077-86.)

From the Section of Vascular Surgery, Dartmouth-Hitchcock Medical Center, Lebanon, N.H. (Dr. Zwolak), and George Washington University Hospital, Washington (Dr. Trout).

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Reprint requests: R. M. Zwolak, Section of Vascular Surgery, Dartmouth-Hitchcock Medical Center, Lebanon, NH 03756.

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In January 1992 the Health Care Financing Administration (HCFA) implemented a completely revised fee schedule for payment of physician services with reimbursement based on three components: physician work, the expense of running a practice, and the expense of malpractice indemnity. Within this structure, a resource-based system was introduced for the physician work component founded on the concept that the "work" of any intellectual or physical medical exercise can be measured as the product of two main factors, time and intensity. This allowed construction of a unitless numeric scale to represent the full range of work from simple to complex, with objective crosswalks linking medical and surgical procedures throughout the complexity spectrum.

The motivation to institute this "Resource-based Relative Value Scale" (RBRVS) was the perception by the HCFA of a maldistribution of Medicare Part B payments between surgeons and nonsurgeons, and the development of the RBRVS was seen as the first step to neutralize the supposed inequity. The physician work scale was developed initially by Hsiao and coworkers from Harvard.[1-3] Under the RBRVS system, every service defined by the current procedural terminology (CPT) coding system was given a "work value" expressed in relative value units (RVUs). The same law that instituted this system also mandated a review of the work values every 5 years to evaluate potentially undervalued or overvalued services. This manuscript describes the actions taken and the results achieved by the Government Relations Committee (GRC) of the Joint Council of The Society for Vascular Surgery (SVS) and the International Society for Cardiovascular Surgery, North American Chapter (ISCVS/NA), during the first of these 5-year reviews.

Vascular surgical procedures attracted little attention in the initial Harvard/Hsiao studies that determined work values for the 7000 services listed as having CPT codes. As outlined in detail by Hertzer and Noether,[4] the Harvard group actually failed to recognize vascular surgery as a distinct specialty. Carotid endarterectomy and infrarenal aortic aneurysm resection were the only vascular procedures that were surveyed in phase I of the Harvard project, and only four additional arterial reconstructions were evaluated in phase II. Little is known about the vascular surgical experience of the surgeons who participated in those surveys, and there was no stipulation that the survey respondents have any personal experience with the procedures they were evaluating. It was not surprising, therefore, that the work values for vascular surgical procedures were found to have many internal inconsistencies as well as being grossly undervalued in comparison with other specialties.

The Joint Council of the SVS and the ISCVS-NA joined the Society of Thoracic Surgeons in commissioning Abt Associates Inc. of Cambridge, Mass., to perform an independent assessment of vascular and cardiothoracic procedure work values shortly after the release of the initial Harvard scale. The Abt survey confirmed the previous observation that the Harvard group had indeed overestimated the work component of relatively minor procedures while substantially underestimating the work component of major operations, a phenomenon that is known as "compression."[5] Armed with convincing data, the Joint Council successfully convinced the HCFA that upward adjustments were necessary to reflect the work involved in resection of complex aortic aneurysms, visceral and aortoiliac revascularization procedures, and several of the lower extremity reconstructions performed with autogenous vein. These enhancements were instituted in the 1993 Medicare Fee Schedule. Although an ad hoc committee of SVS/ISCVS-NA members was anxious to continue this project, the HCFA announced that no further consideration would be given to existing codes until the federally mandated 5-year review.

The HCFA published the timetable and protocol for the 5-year review of work values in the Federal Register on December 8, 1994.[6] They indicated that much of the effort that would be necessary to examine potentially misvalued codes would be shared with the American Medical Association (AMA)/Specialty Society Relative Value Update Committee (RUC) to "involve the family of medicine in the refinement process." The RUC represents 65 medical and surgical specialty societies and was formed in 1991 to recommend work values to the HCFA for new or modified CPT codes developed after phase III of the Harvard study. In that capacity, the RUC gained a reputation for objective and thorough analysis of physician work, and the HCFA was anxious for the 5-year review codes to undergo that same intensive cross-specialty evaluation process. It was also clearly stated, however, that final responsibility for the work values would remain at the HCFA.

The initial deadline for submission of potentially undervalued or overvalued codes was set for February 1995, and these were to be identified in a letter of comment that would also contain preliminary supportive data. Services judged by the HCFA to merit further consideration would be referred to the RUC, and specialty societies were responsible for providing

the RUC with substantially more-detailed supportive data by June 1995. The RUC meetings were scheduled in July and August to perform the evaluations, and RUC recommendations for each service were due back at the HCFA in September. The HCFA decisions regarding work value adjustments were to be made on the basis of consideration of three elements: the RUC values, the work values recommended by the Medicare Carrier Medical Directors (CMDs), and the independent evaluations of the HCFA research staff. Revised values would be published in a "Notice of Proposed Rule Making" (NPRM), and a public comment period would follow. After consideration of responses to the NPRM, the HCFA would publish a final work value rule to become part of the Medicare Fee Schedule on January 1, 1997.

METHODS

The SVS/ISCVS-NA Joint Council GRC met in December 1994 to determine a plan of action for the 5-year review. The initial HCFA announcement emphasized that comment letters should provide detailed information regarding the time and intensity components of physician work in each of the preservice, intraservice, and postservice intervals. For surgical services, the RBRVS defines preservice work as the evaluation and management (E&M) immediately before operation, whereas intraservice work is that performed during the operation, that is, skin-to-skin. Postservice work encompasses all of the E&M from the completion of the operation to the end of the global service period, usually 90 days for most major operations. Although payment for a surgical procedure covers all work performed within the global period, a high percentage of that work, typically 40% to 60%, accrues during the intraservice portion of a patient's care. Members of the GRC agreed that despite the work value enhancements achieved in a few services after the Abt survey in 1992, all three elements of most vascular services remained undervalued in relation to other surgical and medical specialties. A decision was made to focus on intraservice work for the initial submission because the most quantitative data could be obtained.

For many major procedures the RBRVS allocation of work among the preservice, intraservice, and postservice intervals is available, and this allows independent evaluation of each element. The GRC reasoned that a comparison of the intraservice work among vascular and nonvascular operations of similar intensities should identify major cross-specialty inequities, and a simple calculation can be used to make this comparison if operative time is known. Because accurate surgical times can be obtained from operating room (OR) logs at many hospitals, a relative measure of reimbursement rate may be obtained by dividing intraservice RVUs by skin-to-skin surgery times. The result is called the intraservice work per unit time (IWPUT) and is expressed in RVUs per minute. If vascular operations were found to have a substantially lower IWPUT compared with nonvascular procedures of similar intensity, this would provide quantitative evidence that Medicare payment for vascular intraservice work is misaligned in the RBRVS.

To test this hypothesis, accurate skin-to-skin operative times were collected from OR logs for 9 common vascular surgery CPT codes and 11 commonly performed nonvascular procedures at 10 medical centers. The hospitals were located in different states and represented a mix of teaching and private facilities. The operations chosen represented a range from medium to high magnitude. No preexisting knowledge of work intensity biased the choice of CPT codes; rather, these were chosen as typical benchmark operations for each specialty. Because hospital OR data are frequently categorized by the ICD-9 coding system rather than the CPT coding system used in RBRVS, data were excluded if uncertainty existed about accurate conversion between systems. This was an issue primarily for femoropopliteal and femorotibial bypass grafting procedures, for which separate CPT codes exist for the in situ and reversed vein techniques, but a single ICD-9 code covers both autogenous vein methods. Exclusion of these cases reduced the number of femoropopliteal and femorotibial procedures that were available for analysis; however, the excluded data would not have had a substantial impact on the IWPUT analysis regardless of the actual distribution of cases between the techniques.

Median time values were determined for each operation by individual hospital, and frequency-weighted medians were calculated for use as the most representative single intraservice time for each operation. Use of medians rather than means is required by the HCFA and the RUC for this purpose to minimize the effect of outliers. The established intraservice work values were then divided by these frequency-weighted median intraservice times to derive actual current practice values for IWPUT. Data analysis was performed on a Microsoft Excel flowsheet (Microsoft, Bellevue, Wash.) using an Apple Macintosh 6100 desktop computer (Apple Computer, Inc. Cupertino, Calif.). On the basis of these quantitative results, and supported by a series of

compelling evidence arguments summarizing the inadequate evaluation of vascular surgical procedures in the original Harvard/Hsiao studies, the GRC submitted a letter of comment to the HCFA on February 6, 1995. Increases in the work RVU of nine commonly performed vascular services were recommended. Although this left many other undervalued vascular codes uncontested, the specific instructions provided for the 5-year review process had indicated a focused effort.

All nine vascular procedures passed the preliminary screening process by the HCFA and were referred to the RUC for their intensive evaluation. The GRC chose to present the RUC with five separate quantitative methods to justify the work value recommendation for each of these codes. The mandatory first method was a standard RUC survey, which asks physicians to estimate the work involved in a procedure based on comparison with a reference list of established services. Procedures usually chosen for the reference list are within-specialty "signature" operations from the RUC's Multispecialty Points of Comparison (MPC) table. For vascular surgery, construction of this reference list was difficult because most of the vascular operations on the MPC were believed to be undervalued. The reference list was therefore constructed by adding several general surgical procedures to a short list of vascular operations, and an adequate number of SVS/ISCVS members responded to produce valid survey results.

The second method that was used to estimate work for the RUC evaluation represented an extension of the initial GRC focus on the intraservice elements of time, work, and work per unit of time. The GRC asked surgeons who had completed the RUC survey to provide accurate skin-to-skin OR times for their most recent operations in each category, and the median intraservice times were recalculated on the basis of this expanded sample. In contrast to the initial GRC study in which the current vascular surgery IWPUT was calculated by dividing existing intraservice work values by actual skin-to-skin OR times, this portion of the study used the IWPUT equation in the opposite direction. Appropriate intraservice work values were calculated as the product of measured intraservice times and reasonable, representative IWPUT values. The IWPUTs used here were in the 0.070 to 0.085 range, values typical for surgical procedures of medium to high intensity. Preservice and postservice work were then determined on the basis of survey times for each service, and these were added to the intraservice work to arrive at a total RVU.

The third work calculation derived the total work of a vascular surgical service by using an E&M building-block method. Intraservice work was measured by direct analogy to intensive care E&M codes. Because the CPT definition of intensive care codes is based more on time of service than any other E&Ms, these codes can be assigned to intraoperative work on a minute-to-minute linear basis if one assumes that the level of intensity of an operation is equal to that of critical care. Preservice work was included as a single non–intensive care E&M, and postservice work as the sum of individual inpatient and outpatient E&Ms during the global period. Preservice, intraservice, and postservice work were added to arrive at a total work RVU. This method has been used by specialties in the past to justify work values, and it represents an intuitive approach to work evaluation. The fourth evaluation used a step-by-step comparison of the procedure being measured with that of services chosen most frequently by survey respondents as best references, whereas the fifth line of support included work values for vascular surgical operations determined in a study performed by Abt Associates for the American College of Surgeons. The final recommended work values that were submitted by the GRC to the RUC in June 1995 represented a single most-appropriate RVU for each code based on consideration of the five analytic methods. The concordance of these five distinct techniques was remarkable, and the choice of a most representative value for each of the codes was not difficult. It was believed that the general agreement of these diverse methods provided further justification for the summary recommendations.

RESULTS

The initial intraservice work study provided strong support for the contention that vascular procedures are undervalued by the RBRVS (Fig. 1). Values of IWPUT for vascular and nonvascular operations varied along a fivefold range, from the lowest reimbursement rate of 0.026 work units per minute for CPT 35556 (femoropopliteal bypass grafting procedure with vein conduit) to a maximum of 0.12 work units per minute for CPT 52601 (transurethral prostate resection). Eight of the nine procedures that were accorded the least intraservice work per minute were vascular surgical operations.

The compression effect identified several years ago by the Abt study was still evident in that procedures of moderate overall magnitude and duration had high work per minute rates, whereas longer and presumably more complex operations had much

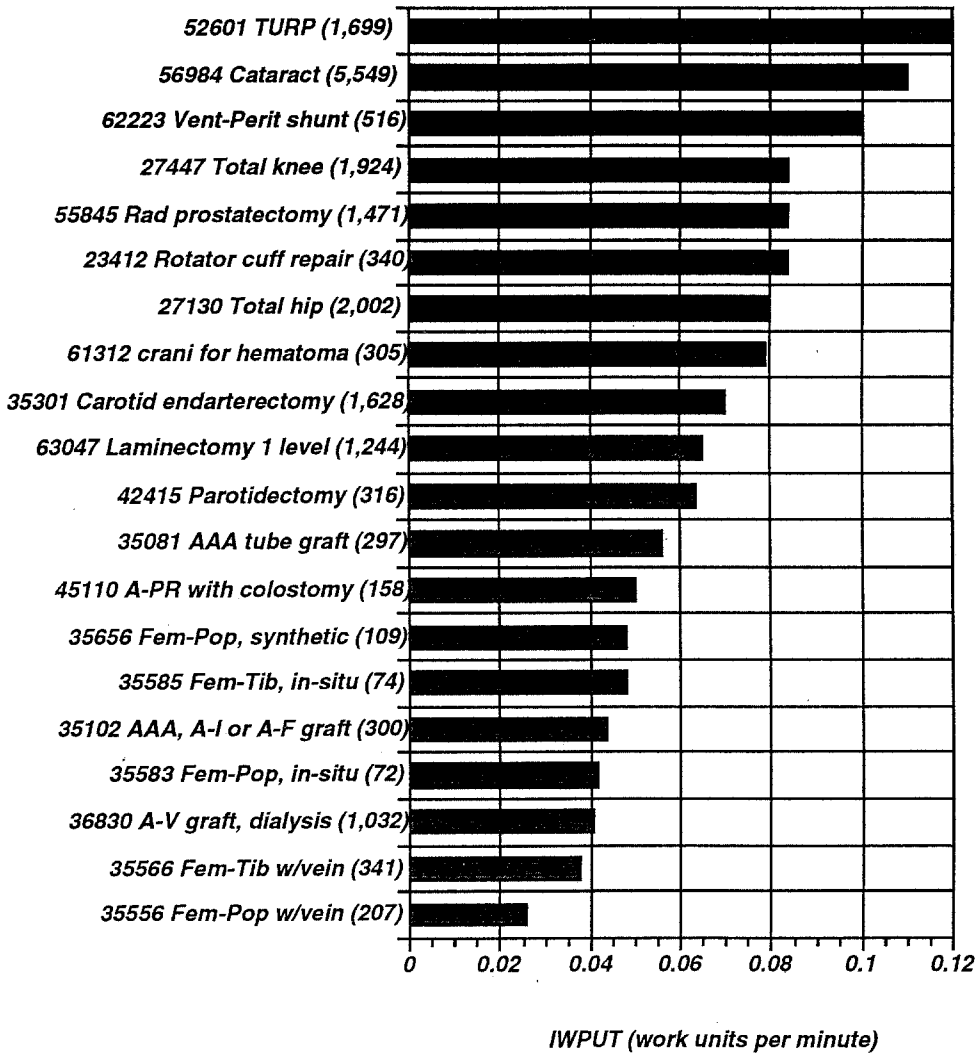

Fig. 1. Intraservice work per unit time (IWPUT) for 9 vascular and 11 nonvascular surgical procedures in 10 survey hospitals, using accurate skin-to-skin OR times. Procedures are arranged from greatest to least IWPUT. Values in parentheses represent number of operations tabulated. Intraservice work is from Harvard/Hsiao/RUC multispecialty points of comparison (MPC) data where available, or derived as 60% of 1995 Medicare Fee Schedule work where not available from MPC (total hip arthroplasty, total knee arthroplasty). Skin-to-skin surgical times were obtained from operative logs, and frequency-weighted median times were used to calculate IWPUT.

lower rates when considered on a work unit per minute basis. In addition to compression, however, a second factor appeared to explain the low IWPUT for the vascular operations. Comparison of the median intraservice times in this study to those provided in the original Harvard studies revealed, in general, a reasonable correspondence for the nonvascular procedures. In contrast, the intraservice times measured in this study for most of the vascular operations were substantially longer than operative times in the Harvard data. Thus the original Harvard/Hsiao intraservice work RVUs for vascular surgery may have been systematically underestimated as a result of inaccurate intraservice time estimates from surgeons who were not entirely familiar with these operations.

After a preliminary evaluation early in 1995, the HCFA forwarded comments submitted for almost 3500 codes to the RUC for detailed analysis. These submitted codes included the nine vascular surgery codes that had been submitted by SVS/ISCVS plus

Table I. Vascular surgery procedures evaluated in the 5-year review of work RVUs

Procedure	*1995 Fee schedule*	*SVS recommendation*	*7/95 workgroup*	*8/95 RUC*	*11/95 CMD*	*4/96 HCFA NPRM*	*1997 Fee schedule*	*1997 % change from 1995*
35081 AAA, sleeve	22.15	28.50	26.23	26.23	25.23	26.23	26.23	+18.4
35082 AAA, ruptured*	28.82	37.00	34.20	34.20	34.20	34.20	34.20	+18.7
35091 AAA, suprarenal*	28.10	36.50	33.16	33.16	33.16	33.16	33.16	+18.0
35102 AAA, AI or AF	23.44	31.50	28.80	28.80	28.80	28.80	28.80	+22.9
35301 Carotid endarterectomy	15.95	18.00	17.79	17.79	17.79	17.79	17.79	+11.5
35556 Fem-pop w/vein	15.47	22.00	18.00	19.37	19.37	19.37	19.84	+28.2
35566 Fem-tib w/vein	20.21	26.25	22.80	24.45†	23.55	24.45	25.00	+23.7
35583 Fem-pop in situ	15.97	24.00	19.60	20.03	19.43	20.03	20.50	+28.4
35585 Fem-tib in situ	19.05	27.00	23.60	25.92†	24.96	25.92	26.47	+39.0
35681 Composite graft add-on*	8.05		3.93	3.93	3.93	3.93	8.05	0.0
35875 Remove clot graft*	9.07		8.19	8.19	8.19	8.19	9.07	0.0
35656 Fem-pop synthetic	13.86	18.00	17.84	17.84	15.96	17.84	18.42	+32.9
36830 Dialysis graft	7.78	11.25	7.78	11.25	9.36	11.25	11.25	+44.6

All codes represent physician work expressed in RVUs.
*Codes submitted as potentially overvalued or undervalued by other societies.
†Work values determined as interim at August RUC, finalized at February 1996.
AI, Aortoiliac; *AF,* aortofemoral; *Fem-pop,* femoropopliteal; *Fem-tib,* femorotibial.

two other potentially undervalued and two potentially overvalued vascular surgery codes that had been submitted by other surgical societies (Table I). In all, there were 669 codes submitted individually or in small groups, whereas 387 codes were identified as potentially overvalued by the Medicare Carrier Medical Directors. More than 2000 other codes were submitted by four specialty societies that identified all or most of their procedures as appropriate for review. Although the SVS/ISCVS consultants had recommended a concentrated effort on a small number of the most undervalued codes, the magnitude of the overall response made it clear that several specialty societies adopted a far more aggressive approach to the 5-year review. The GRC prepared an extensive "Summary Recommendation" for the RUC's June 1995 deadline, and the document included our compelling evidence arguments along with results of the five work evaluation methods. Fig. 2 provides an example of one these, in which accurately measured median skin-to-skin OR time for CPT 35081 (repair of aortic aneurysm with tube graft) is multiplied by an intensity-appropriate IWPUT value to obtain a realistic estimate of intraservice work. In this Summary Recommendation, the GRC also provided supportive comments for the two undervalued vascular surgery codes that had been submitted by other surgical societies.

To evaluate a massive number of procedures in a short time the RUC modified their routine of full-committee evaluation of each code, and the task of intensive code evaluation was distributed among subcommittee work groups. Four physicians were assigned to evaluate the vascular surgery codes, and during a July work group meeting these individuals accepted the compelling evidence arguments that outlined the lack of objective evaluation of vascular surgery codes during the initial Harvard/Hsaio studies. The work group's conclusion allowed reevaluation of the vascular codes to proceed, but the work group subsequently failed to accept any single method or combination of methods that had been used to justify the individual work values. They determined that lesser increases were appropriate for 10 of the 11 codes for which upgrades had been recommended, and they decided that no increase was indicated for the dialysis access code. Finally, the work group agreed with reductions in value for the two vascular codes that had been submitted as potentially overvalued (Table I).

Work values determined by the subcommittees in July would be upheld by the full RUC during the August meeting unless specific appeals were filed, and appeals placed in August could jeopardize gains achieved at the subcommittee level. With those ground rules, the GRC chose not to appeal the July subcommittee work values for four aortic aneurysm codes, carotid endarterectomy, and synthetic femoropopliteal bypass because the recommended RVUs approached the values that were justified by the data. In contrast, the work group work values for hemodialysis graft placement and the four femoropopliteal and femorotibial reconstructions that use vein fell far below thoroughly justified levels, and the decision was made to risk an appeal to the full RUC. In August these five vascular codes were considered as

IWPUT Method for work calculation of 35081

1. Intra-service work per unit time (IWPUT) ranged from 0.050 to 0.120 in the SVS Operative Log Data Study.

2. The median IWPUT for the 11 non-vascular operations in the SVS study is 0.082.

4. The performance of 35081 with its attendant risks of hemorrhage and cardiac complications should merit at least the median level of intra-service work per unit time. The RUC survey intensity ratings would actually support more than a median IWPUT level.

5. The RUC survey intra-service median time for 35081 of 202.5 minutes is substantiated by our original OR log data analysis (230 min.), and by the Hospital log data requested as additional information during the survey (202 min.). In fact, these data would suggest that 202.5 is a conservative (low) number.

6. The intra-service work for 35081 should equal the operative time multiplied by the median surgical IWPUT, or 202.5 x 0.082 = 16.61

7. The pre and post-service work for 35081 are at least typical of the average operation of large magnitude, in that patients presenting for this operation commonly suffer from symptomatic coronary artery disease, hypertension, diabetes, hyperlipidemia, obesity, and COPD.

8. The RUC survey data indicates that intra-service work represents 0.54 of total work. In other words, total work = intra-work / 0.54.

9. The total work of 35081, based on a median IWPUT value, should be 16.61 / 0.54 = 30.76

Fig. 2. Example of IWPUT work calculation used by GRC of SVS/ISCVS for justification of work RVUs for CPT 35081, repair of abdominal aortic aneurysm with tube graft.

part of an enormous agenda. Somewhat more reasonable work values were realized for three of our codes, but only an interim agreement could be reached for the in situ lower-extremity bypass procedures. These two were scheduled for reconsideration at the February 1996 RUC meeting, but the interim values were forwarded along with the others to meet the HCFA's September 1995 deadline (Table I).

In November 1995 the Medicare CMDs met to provide their final 5-year review input to the HCFA. This group believed that five vascular surgery codes had been overvalued by the RUC, and they forwarded their own lesser recommendations (Table I). On April 27, 1996, the HCFA released the "Notice of Proposed Rule Making" (NPRM), which indicated that they accepted the RUC recommendations for all 13 vascular surgery codes (Table I).[7] The results included a minimum of 11% to a maximum 45% increase in the work component of the nine codes that had originally been submitted by the SVS/ISCVS. Of the four other vascular procedures under consideration, two aortic aneurysm codes were increased by 18%, whereas the graft thrombectomy code decreased 10% and the composite graft add-on code was reduced by 51%. Of additional major import was the notice in the NPRM that most inpatient and outpatient E&M codes would be increased by 15% to 20% without a concomitant upward adjustment in the preservice and postservice components of global surgical packages. Because the 5-year review was mandated to be a budget-neutral process, an 8.3% decrease in the work component reimbursement of every service in CPT would be necessary to account for the increased value of the E&M codes. The SVS/ISCVS-NA detailed its strong objection to HCFA's E&M proposal in a comment letter after publication of the NPRM. Likewise, the American College of Surgeons and many other surgical specialty societies submitted similarly critical comments. Most letters identified the E&M decision as being overtly unfair to surgeons and lacking adequate justification on which to base a huge shift in payments. It was also pointed out that the ruling would create a two-tiered system for E&M payment. The Final Rule for the 1997 Medicare Fee Schedule was published late in 1996.[8] HCFA decided not to change their proposal regarding E&M payments. As the basis for their conclusion, they cited a lack of data supporting an increase in the work of E&M performed within global packages since the inception of RBRVS in 1992. The proposed increases in 11 vascular surgical codes were upheld in the Final

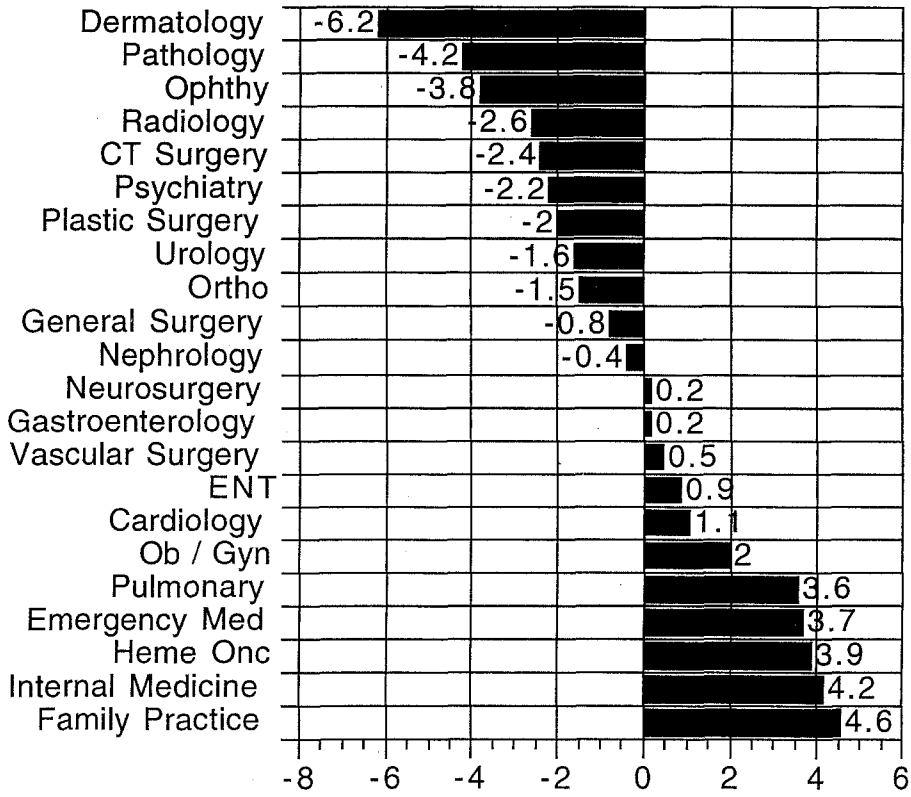

Fig. 3. Overall annual fiscal impact of 5-year reevaluation on Medicare payments to medical specialties. Expressed in percent change. Estimates derived from HCFA Notice of Proposed Rule Making.[7]

Rule, while the two proposed decreases were repealed.*

DISCUSSION

Although vascular surgery achieved substantial corrections in the work values of 11 CPT codes, the overriding impact of the 5-year review will result from the increases that were granted by HCFA for the work of E&M services. HCFA apparently considered but then chose not to make adjustments in global services packages to reflect the improved work RVUs of the E&M codes.[8] Because the majority of surgical E&M falls within 10- or 90-day global service periods, most surgeons will not benefit from the E&M increases in the absence of such an adjustment. The dollar value of the E&M upgrade has been estimated at $2.5 billion annually, an order of magnitude greater than the total impact of all other work value revisions. The 8.3% decrease in payments necessary to neutralize the E&M increases will result in a huge shift away from surgical specialities to the nonprocedural disciplines. For vascular surgery, the positive impact that results from substantially improved work RVUs of 11 commonly performed procedures wil essentially be neutralized by the reduction in payment for the remaining 200 vascular codes. Because the work RVU comprises about 40% of overall Medicare payments for most vascular surgical procedures, these 200 codes will undergo a net decrease in payment of about 3%. Only the relatively high claims frequency of the 11 upgraded codes will prevent a substantial fiscal loss to the vascular surgeons as a result of this 5-year review process.

The method HCFA chose to accomplish the

*The GRC appealed the reduction in work RVUs for codes 35681 and 35875 in their NPRM comment letter to HCFA. Members of the GRC were invited to a HCFA refinement panel in August 1996. At that meeting, repeal of the proposed reductions was requested on the grounds that the original commentor had misinterpreted the CPT code definitions. In the Final Rule, HCFA eliminated the reductions and referred the codes to the CPT Committee for clarification and subsequent work reevaluation.

Existing payment schedule: Payment = total RVUs x conversion factor

Total RVUs = [work RVU x work GPCI] +
[practice cost RVU x practice cost GPCI] +
[malpractice RVU x malpractice GPCI]

Proposed payment schedule: Payment = total RVUs x conversion factor

Total RVUs = [work RVU x **work adjuster** x work GPCI] +
[practice cost RVU x practice cost GPCI] +
[malpractice RVU x malpractice GPCI]

Fig. 4. Prior and new payment formulas for calculation of total work. *GPCI,* geographic practice cost index. 1997 payment formula incorporates a new budget neutrality adjuster. Adoption of this new payment formula precludes the necessity of recalculated work RVU for every CPT code. Because budget neutrality adjustment across work RVUs is 8.3%, the work adjuster value for the 1997 Fee schedule is 0.917.

mandate for budget neutrality is depicted in Fig. 4.[8] In the past, HCFA has been criticized for manipulating physician work values purely for governmental budgetary purposes, when in theory the work values should be based entirely on analysis of relative work. This issue is especially important because nongovernmental payers use the RBRVS scale to determine reimbursement. Thus work value adjustments made by HCFA for budgetary purposes distort payments for services from nonfederal agencies. This issue was discussed in the NPRM, and HCFA suggested institution of a new "work adjustment factor" in the equation for total work. Work RVUs could remain at fixed levels determined by the work analyses, and federal budgetary adjustments would be accomplished through manipulation of the work adjustment factor. Because the 5-year review adjustment was a negative 8.3% across all physician work, the 1997 work adjuster was set at 0.917 (Fig. 4).

Vascular surgery survived the 5-year work value review without suffering a major fiscal insult. Unfortunately, Medicare reimbursement initiatives related to the practice expense component, rebundling, and potential elimination of the separate surgical conversion factor are likely to produce severe reductions in payment for the services provided by this specialty in the near future. Major adjustments in the Practice Expense RVUs are slated to occur in January 1998 when current law mandates that practice expense becomes "resource-based." Although the entire Medicare payment system is commonly referred to as the RBRVS, only the physician work component was resource-based when the system was instituted in 1992. Practice and malpractice RVUs extrapolated from usual and customary charges and may not reflect current actual practice or malpractice expense. Efforts to determine resource-based practice expense for each CPT code are now underway at HCFA. Preliminary projections suggest reductions up to 50% in this component for surgical services. Because practice expense comprises 40% to 65% of Medicare payment for most vascular surgical procedures, the overall impact of resource-based practice expense may be as much as a 25% to 30% overall reduction in payment for services to Medicare beneficiaries.

The Correct Coding Initiative is a new title given to the much older issue of rebundling. A Medicare carrier undertook a contract from HCFA in 1994 to write thousands of additional code pair edits in a purported effort to reduce fraudulent and abusive claims. The new edits were instituted with little time for examination by the medical community, and early reports suggested many of the new exclusions caused inappropriate payment denials. No standardized mechanism for appeal was established by HCFA, but in response to wide criticism the AMA offered to organize a Correct Coding Policy Committee (CCPC). This group of physicians was charged with evaluation of disputed code pairs, and their recommendations were forwarded to HCFA. The SVS/ISCVS appealed 171 inappropriate edits to CCPC, but the ultimate disposition of this effort is yet to be determined. Although the actual fiscal impact of Correct Coding also remains unclear, there is little doubt that these edits selectively target proceduralists. Whenever a patient undergoes more than a single service on the same day by one physician, the multiple simultaneous codes are likely to be flagged by the Correct Coding software. Because surgeons commonly perform simultaneous complex procedures during a single operation, Correct Coding may deny payment based on newly-devised code pair ex-

clusions. At least with regard to vascular surgery, many of these denials will be inappropriate unless the appealed pairs are eliminated.

The separate conversion factor (CF) for surgical services is also at risk. Reimbursement using the RBRVS fee schedule is calculated as the sum of physician work, practice expense, and malpractice RVUs, and this total is multiplied by the CF, which is expressed in dollars per RVU. Three separate CFs are used currently for Medicare payments: one applies to surgical services, another to primary care, and the third to all other physicians' services. Because surgeons have consistently maintained operative volumes below target ceilings set by the Medicare Volume Performance Standards, small increases in the surgical CF have accrued annually based on a formula instituted to promote conservative application of Medicare services. Currently the surgical CF is 8% higher than primary care and 14% higher than the other physicians' factor. Elimination of the volume performance formula with creation of a single CF has been recommended by a variety of agencies. This maneuver would further devalue payments to surgeons for services provided to Medicare patients.

CONCLUSION

Although vascular surgeons achieved significant payment increases for 11 commonly performed procedures during the 5-year review, many other services provided by this specialty remain substantially undervalued. HCFA's decision to exclude global packages from the benefits of upgraded E&M work values will neutralize gains achieved in the 5-year process and further devalue payment for all remaining vascular surgical procedures. When considered with inappropriate denials imposed by Correct Coding, upcoming changes in practice expense, and potential elimination of the separate surgical conversion factor, HCFA's actions threaten to reduce access to high-quality vascular surgical care for Medicare beneficiaries.

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